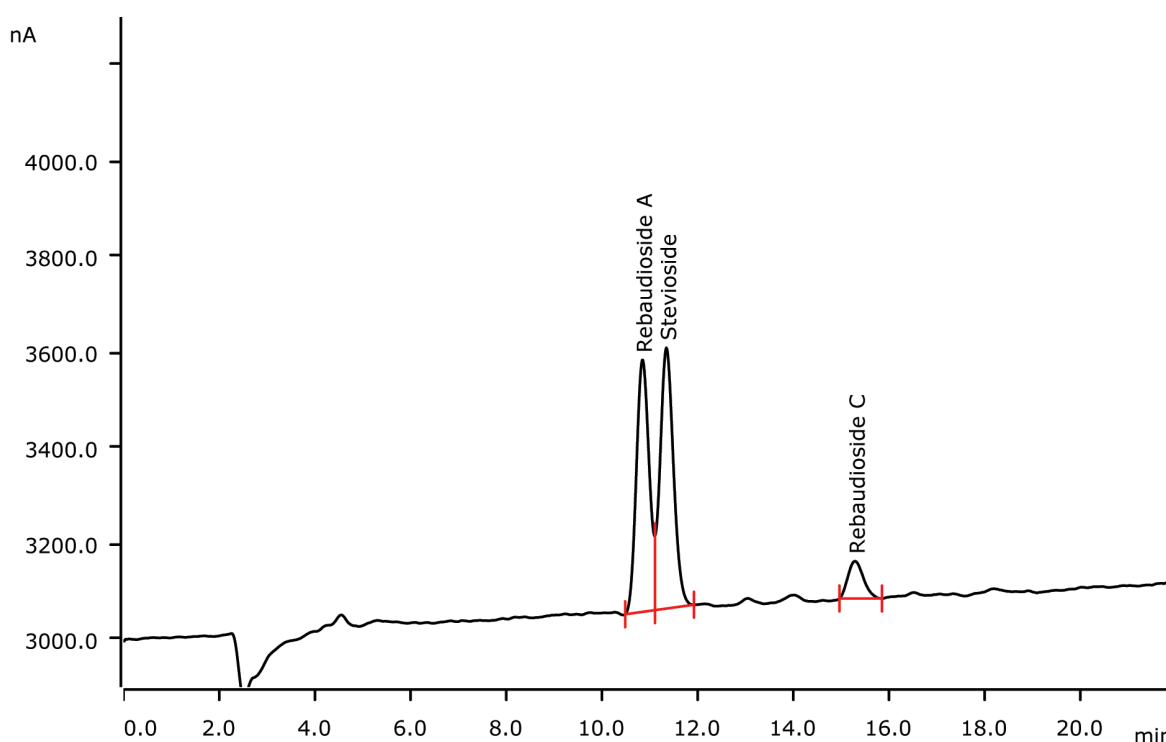


Determination of steviol glycosides in sweetener applying flexIPAD detection



Stevia is a plant of the Compositae family whose leaves can be used as sweetener. For usage in the food sector, the steviol glycosides in stevia need to be controlled for purity. The use of the flexIPAD waveform results in higher response than standard PAD. Separation is performed on a RP column. Post-column addition of sodium hydroxide enables amperometric detection.

Results

Compound	Concentration injected [mg/L]	Concentration in product [mg/kg]
Rebaudioside A	414	41
Stevioside	n.q.	n.q.
Rebaudioside C	n.q.	n.q.

Sample

Stevia sweetener, powder

Sample preparation

Samples are dissolved in eluent and directly injected.

Columns

Luna 5 µm C18, 250 × 4.6 mm 00G-4252-E0
(Phenomenex)

Security Guard Cartridge Kit KJO - 4282
(Phenomenex)

Solutions

Eluent 10 mmol/L sodium dihydrogen phosphate, pH = 4.5 (phosphoric acid); acetonitrile 70:30 (v/v)

Post-column addition 400 mmol/L sodium hydroxide

Parameters

Flow rate 1.0 mL/min

Flow rate (PCA) 0.3 mL/min

Injection volume 20 µL

Recording time 22 min

Column temperature 40 °C

PAD Parameters

Cell Wall-Jet cell

Working electrode Gold (2 mm)

Reference electrode Palladium

Spacer 50 µm

Meas. range 2 mA

Meas. duration 420 ms

Cycle duration 900 ms

Temperature 35 °C

Mode flexIPAD

Measuring mode Current

Analysis

Pulsed amperometric detection

Instrumentation

940 Professional IC Vario ONE/HPG 2.940.1140

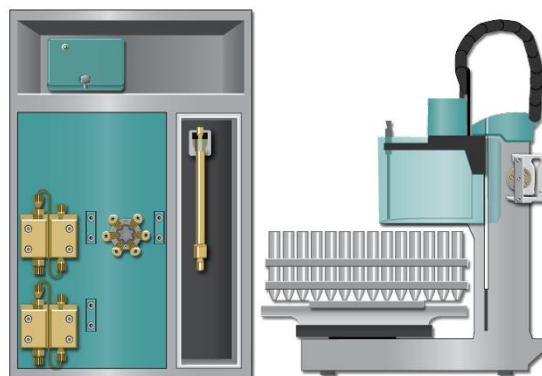
IC Amperometric Detector 2.850.9110

858 Professional Sample Processor 2.858.0020

IC equipment Wall-Jet cell: without electrodes 6.5337.000

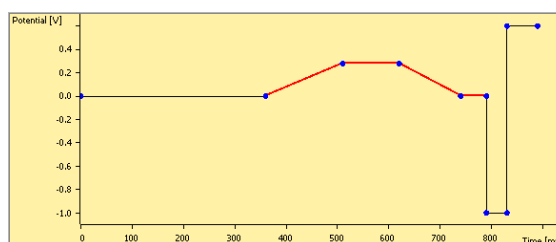
Au working electrode, 2 mm 6.1257.260

Pd reference electrode 6.1257.740



flexIPAD profile

Duration [ms]	Start potential [V]	End potential [V]
370	0.0	0.0
150	0.0	0.28
110	0.28	0.28
120	0.28	0.0
50	0.0	0.0
40	-1.0	-1.0
60	0.6	0.6



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